



CALL SERVICE SYSTEM, CALL SERVICE METHOD AND COMPUTER-
READABLE RECORDING MEDIUM WITH A PROGRAM FOR MAKING A
COMPUTER EXECUTE THE METHOD RECORDED THEREIN, AND PROGRAM
FOR MAKING A COMPUTER EXECUTE THE METHOD

5

FIELD OF THE INVENTION

The present invention relates to call service system which, in response to an inquiry received through telephone, an electronic mail or a home page from a user, gives an answer
10 through telephone or an electronic mail from any one of a plurality of operator terminals, a call service method and a recording medium as well as a program, and, more particularly, concerns such a call service system which can readily respond to an inquiry received through telephone,
15 an electronic mail or a home page efficiently in a versatile manner, a call service method and a recording medium as well as a program for such a call service system.

BACKGROUND OF THE INVENTION

20 Conventionally, there has been known a call service system in which inquiries from a plurality of users are received through telephone, and operators successively answer these inquiries. For example, in a reservation center in an airline and telephone-number information
25 service in a telecommunication company, a plurality of

operators are allocated to a plurality of operator terminals so as to respond to inquiries for empty seats and for telephone numbers.

Moreover, in various companies which used to provide
5 personal and general affairs sections for respective
branches so as to carry out personal management and general
affairs mainly centered on these personal and general affairs
sections, in recent years, they have unified the personal
and general affairs sections, and have tried to provide call
10 service systems mainly used for their employees. More
specifically, in such a call service system, inquiries
through telephone are queue-managed, and successively
allocated to respective operator terminals so that the
operators are allowed to answer the inquiries through
15 telephone.

However, along with the recent development in the
Internet based upon the development of the communication
electronic technique, in recent years, the call centers need
to respond not only to inquiries through telephone, but also
20 to inquiries through electronic mails and home pages.

For this reason, in most of the recent call service
systems, operator terminals dealing with inquiries through
telephone and operator terminals dealing with inquiries
through electronic mails or home pages are provided in a
25 separate manner so as to properly respond to the inquiries

through telephone, electronic mails and home pages.

However, even in the case when the above-mentioned conventional technique is used, a problem arises in which it is difficult to readily respond to users' demands for receiving an answer through telephone after having given an inquiry through a home page. For example, in the case when a user tries to give an inquiry about personal or general affairs through a call service system in the company, the user is seldom convinced with the matter only by the return mail, and in many cases, he or she would like to make another related inquiry. Moreover, in some cases, the intention of the inquiry from the user is not fully understood by the operator, and the user might receive an unexpected answer.

In such a case, the method in which the operator directly makes a telephone call to the user will fail to properly respond to the inquiry efficiently, and cause an increase in the processing time for each case. Moreover, since another operator that is different from the operator who has given the answer through the mail normally makes a call, there is an increase in personal costs on the call center side. Therefore, it is essential to realize a call service system which can readily satisfy the users' demands for receiving an answer through telephone after having given an inquiry through a home page.

The present invention has been achieved in order to

solve the above problem (subject). It is an object of this invention to provide a call service system which can readily respond to an inquiry received through telephone, an electronic mail or a home page efficiently in a versatile 5 manner, a call service method and a recording medium as well as a program for such a call service system.

SUMMARY OF THE INVENTION

In order to achieve the above-mentioned object, 10 according to one aspect of the present invention, there is provided a call service system, which, in response to an inquiry received through telephone, an electronic mail or a home page from a user, gives an answer through telephone or an electronic mail from any one of a plurality of operator 15 terminals, wherein: each of client terminals (corresponding to a client terminal 103 shown in Fig. 1), used by each of the users, comprises: with a user interface for selecting a type of communication media to be used upon informing the user of the contents of the answer through the operator 20 terminal, and a transmission unit for transmitting the type of communication media selected on the user interface, the contents of the inquiry and information related to the user to a server, and the server comprises: with a queue-managing unit (corresponding to a telephone queue 112 and an out-bound 25 file 115 in Fig. 1) for queue-managing inquiries in which

telephone is selected as the type of communication media and inquiries from the users through telephone in a unified manner, and a processing unit for successively processing the respective inquiries managed by the queue-managing unit 5 by using the plurality of operator terminals.

According to the aspect, the type of communication media that is used when the user is informed of the contents of an answer from the operator terminal through the user interface on each of the client terminals used by each of 10 the users is selected, and the selected type of communication media, the contents of the inquiry and information related to the user are transmitted to the server, and the transmitted inquiries in which telephone is selected as the type of communication media and inquiries from the users through 15 telephone are queue-managed by the server in a unified manner so that the respective inquiries thus managed are successively processed by the operator terminal; therefore, the inquiries in which telephone is selected as the type of communication media and the inquiries from the user 20 through telephone can be dealt in a unified manner.

According to another aspect of the present invention, there is provided an call service system according to the above-mentioned aspect, wherein the queue-managing unit manages a first queue (corresponding to a telephone queue 25 112 shown in Fig. 1) consisting of a waiting matrix for

inquiries in which telephone has been selected as the type of communication media and a second queue (corresponding to the out-bound file 115 shown in Fig. 1) consisting of the inquiries from the users through telephone, and the 5 processing unit allocates the inquiries inside the second queue to the respective operator terminals, and in the case when any inquiry within the second queue has not been allocated thereto for a predetermined period of time, each of the operator terminals accepts the inquiries of the first 10 queue successively.

According to the aspect, the first queue consisting of the waiting matrix for inquiries in which telephone has been selected as the type of communication media and the second queue consisting of the inquiries from the users through telephone are managed, and the inquiries inside the 15 second queue are allocated to the respective operator terminals, while in the case when any inquiry within the second queue has not been allocated thereto for a predetermined period of time, each of the operator terminals accepts the inquiries of the first queue successively; therefore, without changing any system related to inquiries through telephone, the inquiries in which telephone is selected as the type of communication media are efficiently 20 processed by utilizing unoccupied operator terminals.

25 According to still another aspect of the present

invention, there is provided a call service system according to the above-mentioned aspect, wherein the queue-managing unit manages the inquiries in which telephone is selected as the type of communication media and the inquiries from 5 the users through telephone by using a single queue, and the processing unit successively allocates the inquiries inside the queue to the respective operator terminals based upon a predetermined rule.

According to the aspect, the inquiries in which 10 telephone is selected as the type of communication media and the inquiries from the users through telephone are managed by using a single queue, and the inquiries inside the queue are successively allocated to the respective operator terminals based upon a predetermined rule; 15 therefore, it is possible to process the inquiries efficiently by utilizing the system related to inquiries through telephone.

According to still another aspect of the present invention, there is provided a call service system according 20 to the above-mentioned aspect, wherein the queue managing unit is characterized by queue-managing a demand for notification (corresponding to out-bound data in embodiments) given to the operator terminals so as to simultaneously notify the plurality of users of information 25 items, inquiries (corresponding to requested data in the

embodiments) in which telephone is selected as the type of communication media, and inquiries from the users through telephone, in a unified manner.

According to the aspect, a demand for notification
5 given to the operator terminals so as to simultaneously
notify the plurality of users of information items, inquiries
in which telephone is selected as the type of communication
media and inquiries from the users through telephone are
queue-managed in a unified manner so that a process referred
10 to as an out-bound, transmitted from the operator terminal
side, is also managed in a unified manner.

According to still another aspect of the present invention, there is provided a call service system according to the above-mentioned aspect, wherein the user interface
15 is characterized by comprising a home page inquiry screen that is provided with at least an input frame (corresponding to a selection frame 704 shown in Fig. 8) for allowing a selection among a retrieval of knowledge data base, an inquiry through an electronic mail and an inquiry through
20 telephone, an input frame (corresponding to an input frame 701 shown in Fig. 7) used for inputting information related to the user and an input frame (corresponding to an input frame 702 shown in Fig. 7) in which the contents of an inquiry are inputted.

25 According to the aspect, the user interface is prepared

as a home-page inquiry screen that is provided with at least an input frame for allowing a selection among a retrieval of knowledge data base, an inquiry through an electronic mail and an inquiry through telephone, an input frame used 5 for inputting information related to the user and an input frame in which the contents of an inquiry are inputted; therefore, it is possible to easily make a selection from the retrieval of knowledge data base, the inquiry through an electronic mail and the inquiry through telephone, on 10 the home page.

According to still another aspect of the present invention, wherein in response to an inquiry received through telephone, an electronic mail or a home page from a user, an answer is given through telephone or an electronic mail 15 from any one of a plurality of operator terminals, is provided with the steps of: selecting a type of communication media to be used upon informing the user of the contents of the answer through the user interface on the client terminal used by the user from the operator terminal; transmitting 20 the type of communication media selected in the selection step, the contents of the inquiry and information related to the user to the server; queue-managing the inquiries in which telephone is selected as the type of communication media that have been transmitted from the transmission step 25 and the inquiries through telephone from the users in a

unified manner by the server; and successively processing the inquires that have been managed by the queue managing step by using the plurality of operator terminals.

According to the aspect, a type of communication media, 5 which is to be used upon informing the user of the contents of the answer through the user interface on the client terminal used by the user from the operator terminal, is selected, the type of communication media thus selected, the contents of the inquiry and information related to the 10 user is transmitted to the server, the inquiries in which telephone is selected as the type of communication media that have been transmitted from the transmission step and the inquiries from the users through telephone are queue-managed in a unified manner by the server, and the 15 inquires that have been managed by the queue managing-step are successively processed by using the plurality of operator terminals; therefore, it is possible to deal with the inquiries in which telephone is selected as the type of communication media and the inquiries from the users through 20 telephone in a unified manner.

According to still another aspect of the present invention, there is provided a recording medium, which is a computer-readable recording medium storing a program for allowing a computer to execute a call service method in which, 25 in response to an inquiry received through telephone, an

electronic mail or a home page from a user, an answer is given through telephone or an electronic mail from any one of a plurality of operator terminals, is characterized by storing the program that allows the computer to execute the 5 steps of: selecting a type of communication media to be used upon informing the user of the contents of the answer through the user interface on the client terminal used by the user from the operator terminal; transmitting the type of communication media selected in the selection step, the 10 contents of the inquiry and information related to the user to the server; queue-managing the inquiries in which telephone is selected as the type of communication media that have been transmitted from the transmission step and the inquiries through telephone from the users in a unified 15 manner by the server; and successively processing the inquiries that have been managed by the queue managing step by using the plurality of operator terminals.

According to still another aspect of the present invention, there is provided a program, which is for allowing a computer to execute a call service method in which, in response to an inquiry received through telephone, an electronic mail or a home page from a user, an answer is given through telephone or an electronic mail from any one of a plurality of operator terminals, is characterized in that it allows the computer to execute the sequences of:

selecting a type of communication media to be used upon informing the user of the contents of the answer through the user interface on the client terminal used by the user from the operator terminal; transmitting the type of 5 communication media selected in the selection sequence, the contents of the inquiry and information related to the user to the server; queue-managing the inquiries in which telephone is selected as the type of communication media that have been transmitted from the transmission sequence 10 and the inquiries through telephone from the users in a unified manner by the server; and successively processing the inquiries that have been managed by the queue-managing sequence by using the plurality of operator terminals.

According to the aspect, a type of communication media, 15 which is to be used upon informing the user of the contents of the answer through the user interface on the client terminal used by the user from the operator terminal, is selected, the type of communication media thus selected, the contents of the inquiry and information related to the 20 user is transmitted to the server, the inquiries in which telephone is selected as the type of communication media that have been transmitted from the transmission step and the inquiries from the users through telephone are queue-managed in a unified manner by the server, and the 25 inquiries that have been managed by the queue managing-step

are successively processed by using the plurality of operator terminals; therefore, it is possible to realize the operation for dealing with the inquiries in which telephone is selected as the type of communication media and the inquiries from 5 the users through telephone in a unified manner by utilizing a computer.

Other objects and features of this invention will become understood from the following description with reference to the accompanying drawings.

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BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a block diagram that shows a system construction of a call service system in accordance with one embodiment;

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Fig. 2 is an explanatory drawing that shows call receiving procedures in an operator terminal shown in Fig. 1;

Fig. 3 is an explanatory drawing that shows processing steps that are carried out by the operator terminal shown 20 in Fig. 1;

Fig. 4 is an explanatory drawing that shows a flow of data in the call service system shown in Fig. 1;

Fig. 5 is a drawing that shows one example of a display screen upon receipt of a telephone call in the operator 25 terminal shown in Fig. 4;

Fig. 6 is a drawing that shows one example of a display screen upon clicking a response button shown in Fig. 5;

Fig. 7 is a drawing that shows one example of a home page on a client terminal shown in Fig. 4;

5 Fig. 8 is a drawing that shows another example of a home page on the client terminal shown in Fig. 4;

Fig. 9 is a drawing that shows another example of a display screen upon receipt of a communication on the operator terminal shown in Fig. 4 through the home page;

10 Fig. 10 is a drawing that shows one example of a display screen that is given when OK button of Fig. 9 is clicked; and

Fig. 11 is a drawing that shows one example of a display screen in which, upon escalation from an operator terminal 15 of a first line to an operation terminal of a second line, the operation terminal of the second line is shown.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring to attached Figures, the following 20 description will discuss preferred embodiments of a call service system in accordance with the present invention, a call service method and a computer-readable recording medium that stores a program for allowing a computer to execute such a method. Here, the present preferred 25 embodiment exemplifies a case in which the present invention

is applied to a call service system used for personal-general affairs sections.

First, an explanation will be given of a system construction of a call service system in accordance with 5 the present preferred embodiment. Fig. 1 is a block diagram that shows the system construction of the call service system in accordance with the present embodiment. As illustrated in this Figure, this call service system is arranged so that a user 101 is allowed to make an inquiry related to personal 10 or general affairs to a call center 110 through a telephone 102 or a client terminal 103 that is placed in his or her working place 100. The telephone 102 is allowed to call out to the call center 110 or to receive a call from the call center 110.

15 Moreover, the client terminal 103 is a terminal device which can make an access to and transmit an electronic mail to a home page of the call center 110 by using a predetermined browser. More specifically, this home page screen is provided with an input frame in which information related 20 to a user is inputted, an input frame in which the contents of an inquiry are inputted and an input screen for allowing the user to make a selection as to which communication medium is used to receive the answer to the inquiry, a telephone call or an electronic mail.

25 When, after having inputted these items, the user

carries out predetermined processes, the information related to the user, the contents of the inquiry and the type of communication media through which the answer is to be received are transmitted to the call center 110. Here,
5 in the case when the selection is made so as to receive the answer to the inquiry through a telephone call, the user can receive the corresponding calling-in from an operator in the call center 110 through the telephone 102. Here,
the call center 110 is constituted by an exchange 111, a
10 telephone queue 112, operator terminals 113a to 113c, a CTS server 114, an out-bound file 115, a Web server 116 and a KB server 117.

The exchange 111 is used for establishing a telephone communication line between the operator terminals 113a to
15 113c and the telephone 102 of the user 101 through a line exchange, and upon receipt of calls from a plurality of telephones, holds a waiting matrix for the calls within the telephone queue 112, and successively allocates these to any one of the operator terminals 113a to 113c. The telephone
20 queue 112 is a queue for carrying out the waiting process on the calls from the users 101 through telephone. However, the telephone queue 112 carries out the queue-management only on the calls from the telephone 102 of the user 101 to the call center 110, and the telephone queue 112 does
25 not manage inquiries that have been received from other

communication media.

The operator terminals 113a to 113c are terminal devices through which the operator answers inquiries from the user 101 through telephone. In particular, in the 5 operator terminals 113a to 113c, calls allocated by the exchange 111 are preferentially received so that when the operator carries out a predetermined operation, the telephone communication line is established with the telephone 102 which has been held. Moreover, if the stand-by 10 state has continued for a predetermined period, the operator terminals 113a to 113c request the CTS server 114 data within the out-bound file 115, which will be described later. When any one of the operator terminal 113a to 113c has received the data from the CTS server 114, it automatically calls 15 out to the telephone number of the telephone contained in the data, and informs the operator of this fact.

Here, the display contents on each of the operator terminals 113a to 113c are different depending on cases in which a call is allocated from the exchange 111 and in which 20 data is taken from the out-bound file 115.

The Web server 116 is a server which functions as a window of the call center 110 that carries data transmission and receipt to and from the client terminal 103 operated by the user 101. More specifically, upon receipt of a request 25 for data base from the client terminal 103, the Web server

116 transmits this request for data base to the KB (knowledge base) server 117. Moreover, upon receipt of an inquiry through an electronic mail or a home page, it transmits such data to the CTS server 114.

5 The KB server 117 is a server for managing a knowledge data base in which various past inquiries related to personal-general affairs sections are stored as knowledge, and upon receipt of a request for retrieval of data base from the Web server 116, carries out a retrieval as to whether
10 or not the corresponding knowledge exists on the data base, and returns the results of the retrieval to the Web server 116. Here, in this case, the Web server 116 transfers the results of the retrieval to the client terminal 103.

15 Moreover, the KB server 117 regularly retrieves the knowledge data base, and extracts data (hereinafter, referred to as "out-bound data") that is to be simultaneously sent to a plurality of users and data (hereinafter, referred to as "call-back data" that is to be called back to the corresponding user, and outputs these to the CTS server 114.

20 The CTS (Computer Telegram Support) server 114 stores the out-bound data and the call-back data received from the KB server 117 in the out-bound file 115, and also stores inquiry data to be answered through telephone, received from the Web server 116, in the out-bound file 115. Here, for
25 convenience of explanation, an explanation of inquiry data

to be answered through an electronic mail is omitted; however, such inquiry data is processed by an operator terminal installed in a separated manner.

Moreover, upon receipt of a request for data from any 5 one of the operator terminals 113a to 113c, the CTS server 114 extracts the out-bound data, call-back data and inquiry data stored in the out-bound file 115, and transfers these to the operator terminals 113a to 113c.

The out-bound file 115 is a kind of queue that stores 10 the out-bound data, call-back data and inquiry data in the order of receipts. Here, since such inquiry data is a kind of in-bound data that is forwarded from the user 101 side to the call center 110 side, it is said that the out-bound file 115 deals with the out-bound data, call-back data and 15 in-bound data in a unified manner.

In the call service system having the above-mentioned construction, since a selection can be made from the retrieval of the knowledge data base, an inquiry through an electronic mail and an answer through telephone from the 20 inquiry screen of a home page of the Web server 116, the user 101 is allowed to receive a totalized service based upon the unified screen.

Moreover, in the case when the answer through telephone is selected on the home page, one of the operator terminals 25 113a to 113c, received this data, automatically calls out

to the telephone 102 of the user 101 so that it is possible to reduce the work load imposed on the operator. In particular, any one of the unoccupied operator terminals 113a to 113c is allowed to request for data in the out-bound 5 file 115; therefore, it is possible to easily increase operator terminals. Furthermore, since the out-bound data, call-back data and in-bound data are unified in the out-bound file 115, data exchange to and from the respective operators can be carried out efficiently.

10 Next, a detailed explanation will be given of a call handling operation by the operator using the operator terminals 113a to 113c shown in Fig. 1. Fig. 2 is an explanatory drawing that shows the call handling operation by the operator using the operator terminals 113a to 113c 15 shown in Fig. 1. As illustrated in this Figure, from the viewpoint of the call handling operation, the call center 110 is constituted by a front office 200, a main office personal section 210, a head quarter personal section 220, a back-office 230, etc.

20 The front office 200 is constituted by a first line (1st line) 201 for carrying out a normal call handling operation and a second line (2nd line) 202 of a technical operation group for carrying out a call handling operation in the case when the first line 201 fails to solve a specific 25 problem. To this first line 201, operators handling

personal affairs, wages, financial affairs, life insurance (social insurance), working conditions, travel expenses, systems, etc. are assigned. In this case, however, one operator may handle a plurality of the items. Here, each 5 of the operator terminals can automatically activate a screen related to a subject (a user having an inquiry).

To the second line 202, persons in charge of the respective operations (operation 1 to operation 5) are assigned, and these persons normally carry out the operations 10 related to personal affairs, wages, etc. Only in the case when the first line 201 fails to solve a specific problem, the specific inquiry is escalated to the second line 202, and the corresponding voice and image screens are simultaneously transferred thereto. After the contents of 15 an answer has been formed in the second line 202, the contents of the answer are call-back-registered in the out-bound file 115, or given to the telephone 102 through a call.

Additionally, in the case when the specific problem can not be solved even by the second line 202, it is further 20 escalated to the back office 230 where the expert is available. Here, those inquiries that have been solved and those that have not been solved are respectively stored in the CTS server in a separated manner, and those inquiries can be reviewed from the main office personal section 210 and the head quarter 25 personal section 220.

In this manner, in the present embodiment, the operators in the front office 201 are arranged in the two systems of the first line 201 and the second line 202 so that the first line 201 accepts inquiries and basically 5 handles them, and only in the case when the expert's help is required, the second line 202 accepts the escalation, and this is combined into the first line 201 only in the case when the number of waiting calls has increased; therefore, it is possible to smoothly absorb the difference 10 between the high rate and low rate in the operation rate of the operators.

Next, an explanation will be given of a sequence of processes in the operator terminals 113a to 113c shown in Fig. 1. Fig. 3 is an explanatory drawing that explains the 15 sequence of processes in the operator terminal 113a shown in Fig. 1. Here, the same processes are carried out in the operator terminals 113b to 113c. As illustrated in this Figure, telephone calls and data arrive in the operator terminal 113a through two routes. More specifically, a user 20 101 gives a telephone call to the call center 110 through the telephone 102, the operator terminal 113a receives the telephone call through a public line network and the exchange 111.

Moreover, in the case when, on a home page of the client 25 terminal 103, a user 101 inputs basic information such as

information related the user and selection of the type of media through which the answer is received (step S301), inputs the contents of an inquiry (step S302), inputs the number of the near-by telephone (the telephone number of 5 the telephone 102) (step S303) and specifies a predetermined input frame so as to transmit the inquiry data (step S304), the inquiry data is stored in the out-bound file 115 through the Web server 116. Thus, the operator terminal 113a first confirms whether or not there is any received telephone call 10 (step S305), and if there is any received telephone call (Yes, at step S305), the operator answers the call (step S308), and the telephone line is then disconnected (step S309).

In contrast, if there is no received telephone call 15 (No, at step S305), the operator confirms whether or not there is any data in the out-bound file 115 (step S306), and if there is any data (Yes, at step S306), the operator gives an automatic transmission to the telephone 102 (step S307), carries out a telephone call process (step S308), 20 and then makes the telephone line disconnected (step S309). Moreover, in the case when there is no data in the out-bound file 115 (No, in step S306), after a timer has counted a predetermined period time until the process has been finished, the sequence proceeds to step S305 (step S310 to S311).

25 Here, the reason why the confirmation of the receipt

of the telephone call at step S305 is more preferentially made than the confirmation of the receipt of the data within the out-bound file 115 at step S306 is because it is necessary to preferentially process the telephone call connected 5 through the on-line. However, the steps S305 and S206 may be regularly reversed so that a fixed amount of the received data may be processed within the out-bound file 115.

Next, an explanation will be given of a flow of data and screen display images in the call service system shown 10 in Fig. 1. Fig. 4 is an explanatory drawing that shows the flow of data in the call service system shown in Fig. 1. Moreover, Figs. 5 to 12 are drawings that show examples of 15 respective display screens. As shown in these Figures, when a user 101 makes a telephone call to the call center 110 from the telephone 102 in his or her office 100, the telephone call arrives at the exchange 111 through the public line network, and is then received by an operator terminal of the first line. Here, for convenience of explanation, the operator terminal 113a is set to be the first line terminal, 20 and the operator terminal 410 is set to be the second line terminal.

Fig. 5 shows one example of the display screen at the time when the operator terminal 113a, shown in Fig. 4, has received the telephone call, and Fig. 6 shows one example 25 of the display screen at the time when a response button,

shown in Fig. 5, has been clicked.

As illustrated in Fig. 5, in this case, a message "Call received", which clearly informs the operator of the fact that there is any received telephone call, is widely displayed on the screen. Thus, the operator on the terminal 113a answers the call, receives the contents of an inquiry, and gives an answer to the user. Here, when the response button in Fig. 5 is clicked, only information related to the user, as shown Fig. 6, is displayed on the screen of the operator terminal 113a. Here, in the case when a user gives an inquiry through a home page on the client terminal 103 in the office 100, the user inputs a user code 401a, the contents of the inquiry 401b, a telephone number 401c, etc., in the home page 401, and transmit these.

Figs. 7 and 8 are drawings that show one example of the home page 401 on the client terminal shown in Fig. 4. As illustrated in this Figure, the home page 401 is provided with an input frame 701 through which the user number 401a is inputted, an input frame 702 in which the contents 401b of an inquiry is inputted, and an input frame 703 in which the telephone number 401c is inputted. Moreover, there is also a selection frame 704 for allowing a selection as to whether an answer to the inquiry is given through an electronic mail or through telephone. When a transmission button 705 is clicked, these data are transmitted to the

Web server 116, and stored inside the out-bound file 115.

Again in Fig. 4, the out-bound file 115 is provided with a user code frame 402, an inquiry contents frame 403, an answer contents frame 404 and a telephone number frame 5 405, and in accordance with these forms, the inquiry data is stored in the out-bound file 115. Here, the out-bound data and the call-back data are extracted from the knowledge data base of the KB server 117, if necessary, and stored in the out-bound file 115.

10 Accordingly, the out-bound data, call-back data and inquiry data are stored in the out-bound file 115 so that the operator terminal 113a requests data within the out-bound file 115 during an unoccupied time, and automatically transmits the resulting data to the telephone 102 of the 15 user 101 so as to allow the operator to confirm the connection of the telephone line.

Fig. 9 is a drawing that shows one example of the display screen in the case when a transmission from the home page has arrived in the operator terminal 113a shown in Fig. 4, 20 and Fig. 10 is a drawing that shows one example of a screen at the time when an OK button shown in Fig. 9 is clicked.

As illustrated in Fig. 9, in this case, a message "Inquiry from the home page", which clearly indicates that there is any data arrival from the home page, is widely 25 displayed on the screen. When the OK button in the center

of this message is clicked, a screen shown in Fig. 10 is displayed. As illustrated in Fig. 10, in this display screen, not only the information related to the user, but also the contents of the inquiry are displayed. Thus, the operator 5 of the operator terminal 113a recognizes that the inquiry is given through the home page, answers the call while considering the contents of the inquiry, and gives an answer to the user about the contents of the inquiry.

Here, in the case when the operator of the operator 10 terminal 113a in the first line is unable to answer the inquiry, the inquiry is escalated to the operator terminal 410 in the second line. In other words, the escalation of this type allows the operator terminal 410 in the second line to display data, such as the user code 411, the contents 15 of the inquiry 412 and the telephone number 410; thus, in the operator terminal 410 in the second line, the contents of the inquiry 412 are examined, the contents of an answer 414 are formed, and the resulting data is answer-registered in the out-bound file 115 as a call-back request.

20 Fig. 11 is a drawing that shows one example of the display screen on the operator terminal 410 in the second line in the case when the escalation has been made from the operator terminal 113a in the first line to the operator terminal 410 in the second line. As illustrated in this 25 Figure, the display screen formed by adding the contents

of the answer to the contents of the display of Fig. 10 is provided on the operator terminal 410.

As described above, in the present embodiment, an arrangement is made so that, from the inquiry screen of the 5 home page of the Web server 116, a selection is made among the retrieval of the knowledge data base, the inquiry through an electronic mail and the receipt of an answer through telephone; therefore, the user 101 is allowed to receive a totalized service based upon the unified screen.

10 Moreover, in the case when the answer through telephone is selected in the home page, the corresponding one of operator terminals 113a to 113c automatically calls out to the telephone 102 of the user 101; therefore, it is possible to reduce work loads imposed on the operators.

15 Furthermore, any one of the unoccupied operator terminals 113a to 113c is allowed to request for data in the out-bound file 115; therefore, it is possible to easily increase operator terminals. Furthermore, since the out-bound data, call-back data and in-bound data are unified 20 in the out-bound file 115, data exchange to and from the respective operators can be carried out efficiently.

The present embodiment has exemplified a case in which the telephone queue 112 and the out-bound file 115 are placed in a separated manner; however, the present invention is 25 not intended to be limited by this arrangement, and both

of the queues may be unified into one. The unified queue of this type makes it possible to utilize the analogy of the operator-terminal load control given by the exchange to a maximum degree.

5 Moreover, the present embodiment has exemplified a case in which the present invention is applied to the call service system related to the personal-general affairs sections; however, the present invention is not intended to be limited by this, and the present invention may be applied
10 to a reservation system in air lines, a telephone number system in communication enterprises, or a user support system in makers.

As described above, according to one aspect of the present invention, a type of communication media, which is
15 to be used upon informing the user of the contents of the answer through the user interface on the client terminal used by the user from the operator terminal, is selected, the type of communication media selected in the selection step, the contents of the inquiry and information related
20 to the user to the server are transmitted to the server; the inquiries in which telephone is selected as the type of communication media that have been transmitted and the inquiries through telephone from the users are queue-managed in a unified manner by the server, and the inquiries that
25 have been managed are successively processed by using the

plurality of operator terminals; therefore, the inquiries in which telephone is selected as the type of communication media and the inquiries from the users through telephone can be handled in a unified manner, thereby making it possible
5 to provide a call service system which can readily respond to an inquiry received through telephone, an electronic mail or a home page efficiently in a versatile manner.

Moreover, according to one aspect of the present invention, a first queue consisting of a waiting matrix for
10 inquiries in which telephone has been selected as the type of communication media and a second queue consisting of the inquiries from the users through telephone are managed, and the inquiries inside the second queue are allocated to the respective operator terminals, while in the case when any
15 inquiry within the second queue has not been allocated thereto for a predetermined period of time, each of the operator terminals accepts the inquiries of the first queue successively; therefore, it becomes possible to provide a call service system in which, without changing any system
20 related to inquiries through telephone, the inquiries in which telephone is selected as the type of communication media are efficiently processed by utilizing unoccupied operator terminals,

Moreover, according to one aspect of the present
25 invention, the inquiries in which telephone is selected as

the type of communication media and the inquiries from the users through telephone are managed by using a single queue, and the inquiries inside the queue are allocated to the respective operator terminals based upon a predetermined rule; therefore, it is possible to provide a call system which can deal with the inquiries efficiently by utilizing the system related to inquiries through telephone.

Moreover, according to one aspect of the present invention, a demand for notification given to the operator terminals so as to simultaneously notify the plurality of users of information items, inquiries in which telephone is selected as the type of communication media, and inquiries from the users through telephone are queue-managed in a unified manner; therefore, it is possible to provide a call service system which can also deal with a process referred to as an out-bound, transmitted from the operator terminal side, in a unified manner.

Moreover, according to one aspect of the present invention, the user interface is prepared as a home-page inquiry screen that is provided with at least an input frame for allowing a selection among a retrieval of knowledge data base, an inquiry through an electronic mail and an inquiry through telephone, an input frame used for inputting information related to the user and an input frame in which the contents of an inquiry are inputted; therefore, it is

possible to provide a call service system which efficiently allows a selection from the retrieval of knowledge data base, the inquiry through an electronic mail and the inquiry through telephone, on the home page.

5 Moreover, according to still another the present invention, a type of communication media, which is to be used upon informing the user of the contents of the answer through the user interface on the client terminal used by the user from the operator terminal, is selected, the type
10 of communication media thus selected, the contents of the inquiry and information related to the user is transmitted to the server, the inquiries in which telephone is selected as the type of communication media that have been transmitted and the inquiries from the users through telephone are
15 queue-managed in a unified manner by the server, and the inquiries that have been managed are successively processed by using the plurality of operator terminals; therefore, it is possible to deal with the inquiries in which telephone is selected as the type of communication media and the
20 inquiries from the users through telephone in a unified manner, and consequently to provide a call service system which can readily respond to an inquiry received through telephone, an electronic mail or a home page efficiently in a versatile manner.

25 Moreover, according to still another with the present

invention, a type of communication media, which is to be used upon informing the user of the contents of the answer through the user interface on the client terminal used by the user from the operator terminal, is selected, the type 5 of communication media thus selected, the contents of the inquiry and information related to the user is transmitted to the server, the inquiries in which telephone is selected as the type of communication media that have been transmitted and the inquiries from the users through telephone are 10 queue-managed in a unified manner by the server, and the inquiries that have been managed are successively processed by using the plurality of operator terminals; therefore, it is possible to realize the operation for dealing with the inquiries in which telephone is selected as the type 15 of communication media and the inquiries from the users through telephone in a unified manner by utilizing a computer, and consequently to provide a recording medium that allows the computer to execute a call service method which can readily respond to an inquiry received through telephone, 20 an electronic mail or a home page efficiently in a versatile manner.

Although the invention has been described with respect to a specific embodiment for a complete and clear disclosure, the appended claims are not to be thus limited but are to 25 be construed as embodying all modifications and alternative

constructions that may occur to one skilled in the art which fairly fall within the basic teaching herein set forth.